Serial No.: 10/797,971
Group Art Unit: 2815

AMENDMENTS TO CLAIMS

- Please delete claims 4, 10, and 16.
- Please amend pending claims 1, 7, 13, and 14 as indicated below. A complete listing of all claims and their status in the application are as follows:

1. (currently amended) A surface-mount-enhanced lead frame, comprising:

a die pad;~~-and~~

a plurality of leads disposed around the die pad, wherein a dam bar structure formed with an indentation is integrally formed to be connected to each end of the leads away from the die ~~pad~~pad; and

a solder metal layer is formed on a surface of the indentation of the dam bar structure of the lead frame.

2. (original) The lead frame as claimed in claim 1, wherein the lead frame is a quad-flat non-leaded (QFN) lead frame.

3. (original) The lead frame as claimed in claim 1, wherein the indentation is formed by either one of the chemical etching or punching method.

4. (canceled)

5. (original) The lead frame as claimed in claim 4, wherein the solder metal layer is made of metal palladium (Pd) and is pre-plated on a surface of the lead frame.

6. (original) The lead frame as claimed in claim 4, wherein the solder metal layer made of tin/lead (Sn/Pb) covers an exposed surface of the lead frame after a molding process is conducted to form a package body coupled to the lead frame.

7. (currently amended) A semiconductor package with a surface-mount-enhanced lead frame, comprising:

a lead frame comprising a die pad and a plurality of leads disposed around the die pad, and a dam bar structure formed with an indentation is integrally formed to be connected to each end of the leads away from the die pad;

at least a semiconductor chip bonded on the die pad, and electrically connected to the leads;~~-and~~

a package body formed to encapsulate the semiconductor chip and the lead frame in a manner that the indentation of the dam bar structure is exposed to the ~~ambient.~~; and

a solder metal layer is formed on a surface of the indentation of the dam bar structure of the lead frame.

8. (original) The semiconductor package as claimed in claim 7, wherein the lead frame is a quad-flat non-leaded (QFN) lead frame.

9. (original) The semiconductor package as claimed in claim 7, wherein the indentation is formed by either one of the chemical etching or punching method.

10. (canceled)

11. (original) The semiconductor package as claimed in claim 10, wherein the solder metal layer is made of metal palladium (Pd) which is pre-plated on a surface of the lead frame.

12. (original) The semiconductor package as claimed in claim 10, wherein the solder metal layer made of tin/lead (Sn/Pb) covers an exposed surface of the lead frame after a molding process is conducted to form a package body coupled to the lead frame.

13. (currently amended) A method for fabricating a semiconductor package with surface-mount-enhanced lead frame, comprising:

preparing a lead frame module plate which consists of a plurality of lead frames arranged in matrix form, wherein any two of the neighboring lead frames are separated by a dam bar structure formed with an indentation, and wherein the lead frame comprises a die pad and a plurality of leads disposed around the die pad in a manner that ends of the leads oriented away from the die pad are connected to the dam bar structure;

bonding at least a semiconductor chip on the die pad of each of the lead frame;

electrically connecting the semiconductor chip to the corresponding leads;

forming a package body on the lead frame module plate to cover the lead frames and the semiconductor chips, in a manner that each of the indentations of the dam bar structures is exposed to the ambient;~~and~~

performing a singulation process along the indentations of the dam bar structures so as to separate the lead frame module plate mounted with the semiconductor chips and package body into a plurality of semiconductor ~~packages~~ packages; and

a solder metal layer is formed on a surface of each of the indentations of the dam bar structures on the lead frame module plate.

14. (currently amended) The method as claimed in ~~claim 13~~ claim 13, wherein the lead frame is a quad-flat non-leaded (QFN) lead frame.

15. (original) The method as claimed in claim 13, wherein the indentation is formed by either one of the chemical etching or punching method.

16. (canceled)

17. (original) The method as claimed in claim 16, wherein the solder metal layer made of metal palladium (Pd) is pre-plated on a surface of the lead frame module plate.

18. (original) The method as claimed in claim 16, wherein the solder metal layer made of tin/lead (Sn/Pb) covers an exposed surface of the lead frame module plate after a molding process is conducted to form the package body coupled to the lead frame module plate.

19. (original) The method as claimed in claim 13, wherein the singulation process is a punching process.

20. (original) The method as claimed in claim 13, wherein a branched punching cutting tool is used for performing the singulation process.